

What is claimed is:

1. A process for depositing an active substance on selected regions of  
5 the surface of a stent, comprising:
  - (i) providing the active substance in at least one form selected from the group consisting of a powder and a paste; and
  - (ii) depositing the active substance on the selected regions of the surface  
10 of the stent.
2. The process according to claim 1, wherein the process comprises:
  - (i) coating the active substance on the selected regions and other regions  
of the surface of the stent; and
  - (ii) removing the active substance from the other regions of the surface  
15 of the stent.
3. The process according to claim 1, wherein the active substance is applied only on the selected regions of the surface of the stent.
- 20 4. The process according to claim 3, wherein the active substance is applied by a dispensing nozzle.
5. The process according to claim 4, wherein a numerical control machine for fine positioning imparts on the dispensing nozzle and/or on the  
25 stent a relative movement to apply the active substance.
6. The process according to claim 2, wherein the active substance is removed from the other regions of the surface of the stent by jets of fluid.

7. The process according to claim 2, wherein the active substance is removed from the other regions of the surface of the stent by fitting the stent on a nozzle comprising a perforated tube and emitting jets of fluid from the nozzle and through the inside of the stent.

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8. The process according to claim 6, wherein the jets of fluid comprise jets of liquid interspersed with puffs of air.

9. The process according to claim 7, wherein the jets of fluid comprise jets of liquid interspersed with puffs of air.

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10. The process according to claim 6, wherein the jets of fluid comprise jets of water.

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11. The process according to claim 7, wherein the jets of fluid comprise jets of water.

12. The process according to claim 6, wherein the jets of fluid comprise puffs of nitrogen.

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13. The process according to claim 7, wherein the jets of fluid comprise puffs of nitrogen.

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14. The process according to claim 2, wherein the active substance is removed from the other regions of the surface of the stent by rubbing the surface of the stent with respect to a support.

15. The process according to claim 14, wherein the rubbing support has a compliant surface.

16. The process according to claim 1, wherein the process comprises:  
(i) making a bed or mat of the active substance; and  
(ii) exposing the stent to the bed or mat of active substance so that the  
5 active substance is transferred at least in part onto the surface of the stent.

17. The process according to claim 16, wherein the stent is exposed to the  
bed or mat of active substance with application of pressure.

10 18. The process according to claim 16, wherein the process comprises:  
(i) exposing the stent to the bed or mat of active substance in such a way  
that the active substance coats a surface of the stent, the surface coated  
comprising the selected regions and the other regions of the surface of the  
stents; and  
15 (ii) removing the active substance from the other regions of the surface of  
the stent.

19. The process according to claim 16, wherein the process comprises:  
(i) applying on the stent a mask with openings which leave uncovered  
20 the selected regions;  
(ii) exposing the stent with the mask applied thereto to the bed or mat of  
active substance, so that the active substance coats the mask and the selected  
regions left uncovered by the openings of the mask; and  
(iii) removing the mask from the stent.

25 20. The process according to claim 18, wherein the process comprises:  
(i) applying on the stent a first mask with first openings, which leave  
uncovered first selected regions of the stent;

(ii) exposing the stent, with the first mask applied thereto, to the bed or mat of active substance so that the active substance coats the mask and the first selected regions left uncovered by the first openings of the first mask;

(iii) removing the first mask from the stent;

5 (iv) applying on the stent a second mask with second openings which leave uncovered second selected regions of the stent;

(v) exposing the stent, with the second mask applied thereto, to a bed or mat of a second active substance, so that the second active substance will coat the second mask and the second selected regions left uncovered by the second

10 openings of the second mask; and

(vi) removing the second mask from the stent.

21. The process according to claim 1, wherein the process comprises:

15 (i) subjecting the stent to an electrostatic charging treatment designed for charging electrostatically at least the selected regions of the surface of the stent; and

(ii) exposing the stent, with at least the selected regions electrostatically charged, to the active substance, the electrostatic charge causing the transfer of the active substance onto the surface of the stent.

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22. The process according to claim 21, wherein the process comprises:

25 (i) subjecting the stent to an electrostatic charging treatment designed for electrostatically charging a surface comprising the selected regions and other regions of the surface of the stent, so that the electrostatic charge causes the transfer of the active substance onto a surface comprising the selected regions and other regions of the surface of the stent; and

(ii) removing the active substance from the other regions of the surface of the stent.

23. The process according to claim 21, wherein the electrostatic charging treatment is by corona effect.

24. The process according to claim 22, wherein the electrostatic charging  
5 treatment is by corona effect.

25. The process according to claim 1, wherein the process comprises:  
(i) providing a transfer support for the active substance;  
(ii) subjecting the transfer support to a charging treatment designed for  
10 electrostatically charging respective regions of the transfer support homologous with respect to the selected regions of the surface of the stent;  
(iii) exposing the transfer support, with the respective electrostatically charged regions, to the active substance, the electrostatic charge determining the transfer of the active substance onto the respective electrostatically charged  
15 regions from the transfer support; and  
(iv) exposing the transfer support, with the active substance transferred onto the respective electrostatically charged regions, to the surface of the stent, the exposure determining the transfer of the active substance onto the selected regions of the stent.

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26. The process according to claim 25, wherein steps (ii), (iii), and (iv) are repeated, employing active substances that each time are different, with the respective electrostatically charged regions of the transfer support being either identical or different for the active substances used.

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27. The process according to claim 21, wherein before the electrostatic charge treatment, the stent is coated with a layer of biocompatible carbon material.

28. The process according to claim 22, wherein before the electrostatic charge treatment, the stent is coated with a layer of biocompatible carbon material.

5            29. The process according to claim 25, wherein before the electrostatic charge treatment, the stent is coated with a layer of biocompatible carbon material.

10           30. The process according to claim 26, wherein before the electrostatic charge treatment, the stent is coated with a layer of biocompatible carbon material.

15           31. The process according to claim 1, wherein the stent, with the active substance deposited on the selected regions of the surface of the stent, is subjected to a treatment for stabilizing the active substance.

32. The process according to claim 31, wherein the treatment for stabilizing the active substance is chosen from the group consisting of:

- 20           (i) exposure to temperature or thermal cycles;  
              (ii) dipping in solvent for controlled lengths of time;  
              (iii) exposure to solvent spray;  
              (iv) exposure to solvent vapors;  
              (v) selective treatment with a laser;  
              (vi) selective or integral application of a protective adhesive coating;  
25        and  
              (vii) lyophilization.

33. The process according to claim 2, wherein the stent, with the active substance deposited on the selected regions of the surface of the stent, is

subjected to a treatment for stabilizing the active substance, and wherein the treatment for stabilizing the active substance is performed after the removal of the active substance from the other regions of the surface of the stent.

5           34. The process according to claim 1, wherein the process is performed on the stent when the stent is in a radially contracted condition.

          35. The process according to claim 1, wherein the process is performed on the stent when the stent is in a radially expanded condition, and then  
10       subjecting the stent to radial contraction.

          36. The process according to claim 1, wherein least some of the selected regions are cavities or recesses in the surface of the stent.

15           37. The process according to claim 1, wherein the active substance comprises FK506.

          38. The process according to claim 1, wherein the active substance consists essentially of FK506.  
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          39. The process according to claim 37, wherein the active substance consists essentially of FK506 in the form of powder with a grain size not greater than 15 micron.

25           40. The process according to claim 37, wherein the active substance consists essentially of a paste with a base of FK506 with a viscosity having a value not less than 100,000 to 120,000 cps.

41. A stent loaded with at least one active substance, the stent having been made according to the process of claim 1.

42. The process according to claim 36, wherein the active substance  
5 deposited in the cavities or recesses is subjected to a treatment for stabilizing the active substance selected from the group consisting of:

- (i) exposing the cavities or recesses that contain the active substance to a laser; and
- (ii) selective or integral application of a protective adhesive coating in the  
10 form of a plug to close the cavities or recesses that contain the active substance.